

Audit

Report



OFFICE OF THE INSPECTOR GENERAL

**DEFENSE BASE REALIGNMENT AND CLOSURE
BUDGET DATA FOR THE MOVE OF THE NAVAL AIR
WARFARE CENTER, AIRCRAFT DIVISION, TRENTON,
NEW JERSEY, TO THE NAVAL AIR WARFARE
CENTER, AIRCRAFT DIVISION, PATUXENT RIVER,
MARYLAND, AND ARNOLD AIR FORCE, TENNESSEE**

Report No. 95-284

August 4, 1995

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Department of Defense

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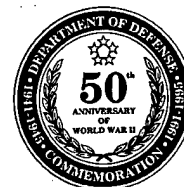
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Acronyms

A-E	Architectural and Engineering
BRAC	Base Realignment and Closure
COBRA	Cost of Base Realignment Actions
MILCON	Military Construction
NAVFAC	Naval Facilities Engineering Command
NAWC AD	Naval Air Warfare Center, Aircraft Division



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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ARLINGTON, VIRGINIA 22202-2884



August 4, 1995

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (COMPTROLLER)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on Defense Base Realignment and Closure Budget Data for the Move of the Naval Air Warfare Center, Aircraft Division, Trenton, New Jersey, to the Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland, and Arnold Air Force Base, Tennessee (Report No. 95-284)

We are providing this audit report for your review and comment. This report is one in a series of reports about FY 1996 Defense base realignment and closure military construction costs. This report provides the audit results of the review of three base realignment and closure military construction projects for the realignment of the Naval Air Warfare Center, Aircraft Division functions from Trenton, New Jersey, to Patuxent River, Maryland, and Arnold Air Force Base, Tennessee.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. The Under Secretary of Defense (Comptroller) concurred with our recommendations. However, the Navy did not provide comments on a draft of this report. We request that the Navy provide comments on the recommendations in this final report by September 5, 1995.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Raymond Spencer, Audit Program Director, at (703) 604-9071 (DSN 664-9071) or Mr. David Vincent, Audit Project Manager, at (703) 604-9058 (DSN 664-9058). If management requests, we will provide a formal briefing on the audit results. See Appendix J for the report distribution.

David K. Steensma

David K. Steensma
Deputy Assistant Inspector General
for Audit

Office of the Inspector General, DoD

Report No. 95-284

August 4, 1995

(Project No. 5CG-5017.06)

Defense Base Realignment and Closure Budget Data for the Move of the Naval Air Warfare Center, Aircraft Division, Trenton, New Jersey, to the Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland, and Arnold Air Force Base, Tennessee

Executive Summary

Introduction. Public Law 102-190, "National Defense Authorization Act for Fiscal Years 1992 and 1993," December 5, 1991, directs the Secretary of Defense to ensure that the amount of the authorization that DoD requested for each military construction project associated with Defense base realignment and closure does not exceed the original estimated cost provided to the Commission on Defense Base Realignment and Closure (the Commission). If requested budget amounts exceed the original project cost estimates provided to the Commission, the Secretary of Defense is required to explain to Congress the reasons for the differences. The Inspector General, DoD, is required to review each base realignment and closure military construction project for which a significant difference exists from the original cost estimate and to provide the results of the review to the congressional Defense committees. This report is one in a series of reports about FY 1996 Defense base realignment and closure military construction costs.

Audit Objectives. The overall audit objective was to determine the accuracy of Defense Base Realignment and Closure Military Construction budget data. The specific objectives were to determine whether the proposed projects were valid Base Realignment and Closure requirements, whether the decision for Military Construction was supported with required documentation including an economic analysis, and whether the economic analysis considered existing facilities.

This report provides the results of the audit on three projects, valued at \$79.2 million, for the realignment of propulsion research functions, personnel, and equipment from the Naval Air Warfare Center, Aircraft Division, Trenton, New Jersey, to Arnold Air Force Base, Tullahoma, Tennessee, and the Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland.

Audit Results. The Navy adequately supported \$56 million of the requirements but did not adequately justify or document the remaining requirements for three military construction projects associated with the closure of the Naval Air Warfare Center, Trenton, New Jersey. We identified \$17 million of overstated requirements and \$6 million of non-Base Realignment and Closure requirements. Implementation of the

recommendations will allow DoD to put to better use Defense base realignment and closure military construction funds. See Part I for a discussion of the finding. See Appendix H for a summary of the potential benefits of the audit.

The review of the management control program will be discussed in a summary report on the base realignment and closure of military construction budget data.

Summary of Recommendations. We recommend that the Under Secretary of Defense (Comptroller) reduce funding for three projects by \$23 million. Further, we recommend that the Commander, Naval Air Warfare Center, Aircraft Division, Trenton, New Jersey, revise and resubmit DD Forms 1391, "Military Construction Program Data," to reflect the appropriate requirements and costs and prepare an economic analysis of the Patuxent River Aircraft Division's space requirements related to the construction project.

Management Comments. The Under Secretary of Defense (Comptroller) concurred with our finding and recommendations to suspend and reduce funding for the base realignment and construction projects. The Navy did not respond to a draft of this report. A summary of the Under Secretary comments is in Part I and the complete text of comments is in Part III.

Audit Response. The actions proposed by the Under Secretary met the intent of our recommendations. We request the Commander, Naval Air Warfare Center Aircraft Division, Trenton, New Jersey, provide comments to the recommendations by September 5, 1995.

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Part I - Audit Results

Audit Results

Audit Background

The Inspector General, DoD, is performing various audits of the Defense base realignment and closure (BRAC) process. This report is one in a series of reports about FY 1996 BRAC military construction (MILCON) costs. For additional information on the BRAC process and the overall scope of the audit of BRAC MILCON costs, see Appendix C.

Audit Objectives

The overall audit objective was to determine the accuracy of Defense BRAC MILCON budget data. The specific objectives were to determine whether the proposed projects were valid BRAC requirements, whether the decision for MILCON was supported with required documentation including an economic analysis, and whether the economic analysis considered existing facilities.

This report provides the audit results on three projects valued at \$79.2 million for the realignment of propulsion research functions, personnel, and equipment from Naval Air Warfare Center, Aircraft Division (NAWC AD), Trenton, New Jersey, to Arnold Air Force Base, Tullahoma, Tennessee, and the NAWC AD, Patuxent River, Maryland. A summary report will be issued later that will address the review of management controls over all BRAC projects.

See Appendix A for a discussion of the scope and methodology and Appendix B for a summary of prior coverage related to the audit objectives.

Adequacy of Base Realignment and Closure Project Documentation

Navy planning officials did not adequately justify or document the requirements for three projects, valued at \$79.2 million, which transferred propulsion research from the Naval Air Warfare Center, Aircraft Division (NAWC AD), Trenton, New Jersey, to Arnold Air Force Base, Tullahoma, Tennessee, and the Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland. Specifically, we identified overstated requirements of \$17 million and non-BRAC requirements of approximately \$6 million. The differences occurred because Navy planning officials did not follow established procedures for developing, documenting, and certifying BRAC MILCON requirements. As a result, \$23 million of the estimated project costs could not be validated and are, therefore, questioned.

Guidance for Planning and Documenting Requirements

Public Law 101-510, "Defense Base Closure and Realignment Act of 1990," November 5, 1990, establishes funds to be used for the closure and realignment of military units and support facilities. Section 2905 of Public Law 101-510 states that funds from the Department of Defense Base Closure Account should be used only for the actions that may be necessary to close or realign any military installation, including the construction of replacement facilities.

Naval Facilities Engineering Command (NAVFAC) Instruction 11010.44E, "Shore Facilities Planning Manual," December 15, 1987, outlines policy on the responsibilities and procedures for the facilities planning process. The instruction states that facility requirements must be accurate and justified, that requirements should not be inflated to accommodate inefficient or oversized existing facilities, and that the use of existing facilities must be considered as an alternative to new construction. NAVFAC Publication P-80, "Facility Planning Criteria for Navy and Marine Corps Shore Installations," October 1982, category 318, "Propulsion Systems and Fuels Laboratories," provides general guidance for the construction of research, development, test and evaluation facilities.

Programming Documents for the Three Projects

Initial documentation for any military construction project is to complete a DD Form 1391, which is the principal programming document identifying the project scope including location, size, cost, and requirements. Facility planners are responsible for providing a detailed justification of the requirement,

Adequacy of Base Realignment and Closure Project Documentation

including the functions to be accommodated, space needed for each function, number and organizational status of personnel, support space requirements, and an industrial engineering analysis of the operations.

To determine the reasonableness of the data in the DD Forms 1391 for these projects, we reviewed facility planning documents and interviewed planning personnel from NAWC AD, Trenton, New Jersey; NAWC AD, Patuxent River, Maryland; and Arnold Air Force Base, Tennessee. Based on our review, the FY 1994 DD Forms 1391 originally submitted for each project most accurately detail the space required to accomplish the respective propulsion testing function being transferred from NAWC AD, Trenton, the losing installation. Therefore, most space comparisons were made using the square footage of area detailed on the DD Forms 1391 and the square footage of area detailed in the plans for the gaining facilities.

However, control room requirements were not separated from test cell area requirements on the DD Forms 1391 for the large and small engine projects at Arnold Air Force Base. Therefore, control room requirements were based on comparisons made between design plans and the corresponding space identified by engineers from the existing facilities at NAWC AD, Trenton.

In September 1993, NAWC AD, Trenton, planning officials prepared DD Forms 1391 on the three projects. Unsupported forms for all three projects were submitted for budget approval in FY 1994. The Chesapeake and Southern Engineering Field Divisions for NAVFAC did not certify the budget estimates presented on any of the DD Forms 1391, as was required. Navy planning officials cited time constraints as the primary reason for unsupported forms and uncertified estimates. These conditions occurred because Navy planning officials did not follow established procedures for developing, documenting, and certifying BRAC MILCON requirements.

Accordingly, we identified overstated and non-BRAC requirements valued at \$23 million for three projects that were not justified and are, therefore, questionable. Specifically, the three projects and the amounts questioned for each are:

- o the (Large) Engine Test Cells, Project P-159T at Arnold Air Force Base, had overstated DD Form 1391 requirements of \$17 million and non-BRAC requirements of \$1.6 million;

- o the (Small) Engine Test Facility Alterations, Project P-160T at Arnold Air Force Base, had non-BRAC requirements of \$0.3 million; and

- o the Propulsion System Evaluation Facility, Project P-953T at Patuxent River, had non-BRAC requirements of \$4.1 million.

Additional details are in the "Analysis of Requirements" for each project and in Appendixes D, E, and F.

Analysis of Requirements for (Large) Engine Test Cells Project at Arnold Air Force Base

The (Large) Engine Test Cells Project transfers the function used to perform turbine engine corrosion and sea level environmental testing of small and medium-sized aircraft engines from NAWC AD, Trenton. Estimated project costs are \$51.4 million and include the purchase and modification of two existing Air Force prefabricated buildings, called hush houses, at Arnold Air Force Base. Each house will hold a new large engine test cell. Modifications require construction of a shared control room/support building placed between the test cell buildings, construction of a fuel conditioning building, and construction of a test equipment storage building to be shared with the Small Engine project also being moved to Arnold Air Force Base.

We compared requirements for the (Large) Engine Test Cells Project as defined in the DD Form 1391, May 5, 1994, to the Design Plan and Cost Estimate developed by the Architectural and Engineering (A-E) contractor. In the case of the planned control rooms, we compared them to the existing control rooms at NAWC AD, Trenton. (see Appendix D).

Our analysis determined that the DD Form 1391 requirements dated May 5, 1994, were overstated by 16,842 square feet of test cell area costing about \$17 million. We also identified non-BRAC requirements totalling 1,970 square feet and 3,514 square feet for increased control room and administration support areas costing about \$0.6 million and \$1 million, respectively. Accordingly, for the (Large) Engine Test Cells Project at Arnold Air Force Base, we identified overstated and non-BRAC requirements valued at \$18.6 million.

Analysis of Requirements for (Small) Engine Test Facility Alterations Project at Arnold Air Force Base

The (Small) Engine Test Facility Alterations Project transfers the function used to perform altitude testing of small aircraft engines from NAWC AD, Trenton. Estimated project costs are \$2 million and include moving the small engine test cells into an existing building at Arnold Air Force Base. Alterations will require construction of a facility within the building and adjacent to the test cells. The facility will contain control rooms, a data center, and observation areas. Additional construction is planned for a test equipment storage building to be shared with the Large Engine Test Cells.

We compared the (Small) Engine Test Facility Alterations Project requirements defined by the DD Form 1391, May 5, 1994, to the Location Plan and Cost Estimate developed by the A-E contractor. The planned control rooms were again compared to the existing control rooms at NAWC AD, Trenton (see Appendix E).

Adequacy of Base Realignment and Closure Project Documentation

These analyses identified non-BRAC requirements for an increased control room area that would cost about \$58,000. We also identified an area of increased size for engine preparation and storage costing about \$0.2 million. Accordingly, non-BRAC requirements for the (Small) Engine Test Facility Alterations Project at Arnold Air Force Base totalled about \$0.3 million.

Analysis of Propulsion System Evaluation Facility Requirements at the Naval Air Warfare Center, Aircraft Division, Patuxent River

The Propulsion System Evaluation Facility project transfers the test and evaluation functions used for aircraft engine accessories, helicopter transmissions, rotating components, unmanned air vehicle propulsion systems, and shipboard aviation fuel and lubricant systems from NAWC AD, Trenton. Estimated project costs are \$25.8 million and include the construction of a new building at Patuxent River to house the majority of the test functions being transferred and the use of prefabricated buildings for a mechanical area and some hazardous material storage.

Similar to our analyses of the projects scheduled for Arnold Air Force Base discussed above, we reviewed requirements for the Propulsion System Facility to be built at the Naval Air Warfare Center, Aircraft Division, Patuxent River. Specifically, we compared requirements as defined in the DD Form 1391, April 19, 1994, to the 100-percent Design Submission and Cost Estimate developed by the A-E contractor (Appendix F).

We determined that an economic analysis was not done (see Appendix G). The lack of this analysis contributed to about \$4.1 million in non-BRAC MILCON requirements as follows:

- o a 2,723 square foot increase for the Information Systems Laboratory costing about \$0.7 million;
- o a 3,662 square foot increase for the Fuels Controls Facility area costing about \$0.9 million;
- o an enhanced high-pressure compressor specification within the design plan;¹ and

¹This unnecessary improvement would cost about \$2.4 million. However, during our audit, officials at the NAWC AD, Trenton, tasked the A-E contractor to redesign the planned facilities to exclude this enhancement.

Adequacy of Base Realignment and Closure Project Documentation

o the design plan also included areas of increased size for pre-engineered storage buildings, roof canopies, and overhangs.²

Conclusion

Budget estimates presented on the DD Forms 1391, April and May 1994, were based upon requirements that were inadequately justified and not documented. Since we could not validate the requirement for these project elements or these project elements were non-BRAC related, we questioned the estimated costs associated with them. As a result, \$23 million of BRAC MILCON funds could be put to better use.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Under Secretary of Defense (Comptroller) adjust the Navy's FY 1996 Base Realignment and Closure military construction and equipment authorizations, reprogramming the funds to other supported but unfunded projects, as follows:

a. Reduce project P-159T, "Engine Test Cells," by about \$17 million in military construction for the Large Engine Test Area overstatements.

b. Reduce project P-159T, "Engine Test Cells," by about \$1.6 million in military construction for the Large Engine Test Area non-base realignment and closure requirements.

c. Reduce project P-160T, "Engine Test Facility Alterations," by \$0.3 million in military construction for the Small Engine Test Area non-base realignment and closure requirements.

d. Reduce project P-953T, "Propulsion System Evaluation Facility," by about \$4 million in military construction for various non-base realignment and closure requirements.

²These pre-engineered buildings contain an additional 3,579 square feet and were classified as BRAC equipment with a \$150,000 cost. The roof canopies and overhangs increased the building size by 781 square feet and cost about \$31,000.

Adequacy of Base Realignment and Closure Project Documentation

e. Reduce project P-953T, "Propulsion System Evaluation Facility," by \$150,000 in equipment for the prefabricated buildings' non-base realignment and closure requirements.

f. Suspend all funding on project P-953T, "Propulsion System Evaluation Facility," by about \$22 million until an economic analysis can support the relocation and justify the expense.

Under Secretary of Defense (Comptroller) Comments. Under Secretary of Defense concurred and agreed to place funds for the projects on administrative hold at the start of FY 1996, if the issue is not resolved.

Audit Response. The actions proposed by the Under Secretary of Defense met the intent of our recommendations.

2. We recommend that the Commander, Naval Air Warfare Center, Aircraft Division, Trenton, New Jersey, revise and resubmit DD Forms 1391, "Military Construction Program Data," to reflect the following:

a. Reduce project P-159T, "Engine Test Cells," by \$17 million to reflect overstatements for the Large Engine Test Area.

b. Reduce project P-159T, "Engine Test Cells," by an additional \$1.6 million to reflect non-base realignment and closure requirements for the Large Engine Test Area.

c. Reduce project P-160T, "Engine Test Facility Alterations," by \$0.3 million to reflect non-base realignment and closure requirements planned for the Small Engine Test Area.

d. Reduce project P-953T, "Propulsion System Evaluation Facility," by \$4 million to reflect various non-base realignment and closure requirements and further reduce this project by \$150,000 in equipment costs to reflect the prefabricated buildings' non-base realignment and closure requirements.

e. Prepare an economic analysis on project P-953T justifying the expenditure for the planned move of the propulsion system evaluation facility to Patuxent River.

Navy Comments. The Navy did not respond to a draft of this report.

Audit Response. We request the Navy to provide comments to the recommendations by September 5, 1995.

Part II - Additional Information

Appendix A. Scope and Methodology

Scope. We examined the FY 1996 BRAC MILCON budget estimate and related documentation, dated from December 1987 to March 1995, for three realignment projects regarding the closure of NAWC AD, Trenton, New Jersey, and transfer of propulsion research functions, personnel, and equipment to Arnold Air Force Base, Tullahoma, Tennessee, and NAWC AD, Patuxent River, Maryland. The three projects are listed below and were estimated to cost \$79.2 million. Management controls were reviewed and will be addressed in a summary report.

FY 1996 BRAC MILCON Projects for Realignment to Arnold Air Force Base and NAWC AD, Patuxent River

<u>Project Number</u>	<u>Project Title</u>	<u>Estimated Cost (in thousands)</u>
P-159T	Engine Test Cells	\$51,405
P-160T	Engine Test Facility Alterations	2,000
P-953T	Propulsion System Evaluation Facility	<u>25,750</u>
Total		\$79,155

Use of Computer-Processed Data. We did not rely on computer-processed data to conduct this review.

Audit Period, Standards, and Locations. We conducted this economy and efficiency audit from January through April 1995 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. Accordingly, we included such tests of management controls considered necessary. See Appendix H for the potential benefits resulting from the audit. Appendix I lists the organizations visited or contacted during the audit.

Appendix B. Summary of Prior Audits and Other Reviews

Since 1991, numerous audits have addressed BRAC issues. This appendix lists selected DoD and Navy BRAC reports. The Office of the Assistant Inspector General for Auditing has not conducted any prior audits of BRAC MILCON projects realigning to the NAWC AD, Trenton.

Inspector General, DoD

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-285	Defense Base Realignment and Closure Budget Data for Realignment of Naval Surface Warfare Center from White Oak, Maryland to Naval Surface Warfare Center, Indian Head, Maryland	August 4, 1995
95-283	Defense Base Realignment and Closure Budget Data for the Closure of Fort Devens, Massachusetts	August 1, 1995
95-282	Defense Base Realignment and Closure Budget Data for Realignment of the HAVE NAP Maintenance Complex from Castle Air Force Base, California, to Barksdale Air Force Base, Louisiana	August 1, 1995
95-278	Defense Base Realignment and Closure Budget Data, Fort Huachuca, Arizona, Family Practice Clinic	July 14, 1995
95-276	Defense Base Realignment and Closure Budget Data for the Closure of Naval Air Station Barbers Point, Hawaii, and Realignment to Naval Air Station Whidbey Island, Washington	July 7, 1995

Appendix B. Summary of Prior Audits and Other Reviews

Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-272	Defense Information School at Fort George G. Meade Base Realignment and Closure Military Construction Project	June 30, 1995
95-258	Defense Base Realignment and Closure Budget Data for the Naval Hospital, Lemoore, California	June 28, 1995
95-257	Defense Base Realignment and Closure Budget Data for the Realignment of the National Airborne Operations Center Forward Operating Base From Grissom Air Force Base, Indiana, to Wright-Patterson Air Force Base, Ohio	June 27, 1995
95-250	Defense Base Realignment and Closure Budget Data for Randolph Air Force Base, San Antonio, Texas	June 23, 1995
95-249	Defense Base Realignment and Closure Budget Data for Goodfellow Air Force Base, San Angelo, Texas	June 23, 1995
95-248	Defense Base Realignment and Closure Budget Data for Sheppard Air Force Base, Wichita Falls, Texas	June 23, 1995
95-247	Defense Base Realignment and Closure Budget Data for the Naval Aviation Depot, North Island, California	June 23, 1995
95-226	Defense Base Realignment and Closure Budget Data for the Realignment of Rickenbacker Air National Guard Base, Ohio	June 8, 1995

Appendix B. Summary of Prior Audits and Other Reviews

Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-223	Defense Base Realignment and Closure Budget Data for the Closure of Marine Corps Air Stations El Toro and Tustin, California, and Realignment to Naval Air Station, Miramar, California	June 8, 1995
95-222	Defense Base Realignment and Closure Budget Data for the Proposed Construction of the Automotive Vehicle Maintenance Facility, Guam	June 7, 1995
95-221	Defense Base Realignment and Closure Budget Data for the Closure of Naval Training Center, San Diego, California	June 6, 1995
95-213	Defense Base Realignment and Closure Budget Data for the Naval Training Center, Great Lakes, Illinois	June 2, 1995
95-212	Defense Base Realignment and Closure Budget Data for Fort Jackson, South Carolina	June 2, 1995
95-208	Defense Base Realignment and Closure Budget Data for Realignment of Construction Battalion Unit 416 from Naval Air Station, Alameda, California, to Naval Air Station, Fallon, Nevada	May 31, 1995
95-205	Defense Base Realignment and Closure Budget Data for the Relocation of Marine Corps Manpower Center at Marine Corps Combat Development Command, Quantico, Virginia	May 26, 1995
95-203	Defense Base Realignment and Closure Budget Data for the Army Reserve Center, Sacramento, California	May 25, 1995

Appendix B. Summary of Prior Audits and Other Reviews

Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-198	Defense Base Realignment and Closure Budget Data for the Closure of the Underway Replenishment Training Facility, Treasure Island, California, and Realignment to the Expeditionary Warfare Training Group Atlantic, Norfolk, Virginia	May 19, 1995
95-196	Defense Base Realignment and Closure Budget Data for the Closure of Naval Air Station, Alameda, California, and Realignment to Puget Sound Naval Shipyard, Washington	May 17, 1995
95-191	Defense Base Realignment and Closure Budget Data for the Closure of Naval Reserve Readiness Center, San Francisco, California, and Realignment to Naval and Marine Corps Reserve Center, Alameda, California	May 15, 1995
95-172	Defense Base Realignment and Closure Budget Data for Griffiss Air Force Base, New York	April 13, 1995
95-154	Audit of Construction Budget Data for Realigning Naval Training Centers Orlando and San Diego to Various Locations	March 21, 1995
95-150	Defense Base Realignment and Closure Budget Data for Closing Naval Station Charleston, South Carolina, and Realigning Projects at Various Sites	March 15, 1995
95-051	Defense Base Realignment and Closure Budget Data for Closing Mare Island Naval Shipyard, California, and Realigning Projects to Various Sites	December 9, 1994

Appendix B. Summary of Prior Audits and Other Reviews

Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-041	Defense Base Closure and Realignment Budget Data for the Closure of Marine Corps Air Stations El Toro and Tustin, California, and the Realignment to Naval Air Station Miramar, California	November 25, 1994
95-039	Defense Base Closure and Realignment Budget Data for Naval Air Station Miramar, California, Realigning to Naval Air Station Fallon, Nevada	November 25, 1994
95-037	Realignment of the Fleet and Mine Warfare Training Center from Naval Station Charleston, South Carolina, to Naval Station Ingleside, Texas	November 23, 1994
95-029	Defense Base Closure and Realignment Budget Data for Naval Air Station Miramar, California, and Realigning Projects to Various Sites	November 15, 1994
95-010	Defense Base Closure and Realignment Budget Data for Marine Corps Air Station Tustin, California, and Realignment to Marine Corps Air Station Camp Pendleton, California	October 17, 1994
94-179	Defense Base Closure and Realignment Budget Data for McGuire Air Force Base, New Jersey; Barksdale Air Force Base, Louisiana; and Fairchild Air Force Base, Washington	August 31, 1994
94-146	Defense Base Closure and Realignment Budget Data for Closing Naval Air Station Cecil Field, Florida, and Realigning Projects to Various Sites	June 21, 1994

Appendix B. Summary of Prior Audits and Other Reviews

Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
94-141	Defense Base Closure and Realignment Budget Data for Naval Air Station Dallas, Texas, and Memphis, Tennessee, Realigning to Carswell Air Reserve Base, Texas	June 17, 1994
94-127	Defense Base Closure and Realignment Budget Data for the Realignment of the Defense Personnel Support Center to the Naval Aviation Supply Office Compound in North Philadelphia, Pennsylvania	June 10, 1994
94-126	Defense Base Closure and Realignment Budget Data for the Closure of Naval Air Station Glenview, Illinois, and Realignment Projects at Fort McCoy, Wisconsin, and Carswell Air Reserve Base, Texas	June 10, 1994
94-125	Defense Base Closure and Realignment Budget Data for the Naval Medical Center Portsmouth, Virginia	June 8, 1994
94-121	Defense Base Closure and Realignment Budget Data for Naval Air Technical Training Center, Naval Air Station Pensacola, Florida	June 7, 1994
94-109	Quick-Reaction Report on the Audit of Defense Base Closure and Realignment Budget Data for Naval Training Center Great Lakes, Illinois	May 19, 1994
94-108	Quick-Reaction Report on the Audit of Defense Base Closure and Realignment Budget Data for Naval Station Treasure Island, California	May 19, 1994

Appendix B. Summary of Prior Audits and Other Reviews

Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
94-107	Griffiss Air Force Base, New York, Defense Base Closure and Realignment Budget Data for Military Construction at Other Sites	May 19, 1994
94-105	Defense Base Closure and Realignment Budget Data for a Tactical Support Center at Naval Air Station Whidbey Island, Washington	May 18, 1994
94-104	Defense Base Closure and Realignment Budget Data for the Defense Contract Management District-West	May 18, 1994
94-103	Air Force Reserve 301st Fighter Wing Covered Aircraft Washrack Project, Carswell Air Reserve Base, Texas	May 18, 1995
94-040	Summary Report on the Audit of Defense Base Closure and Realignment Budget Data for Fiscal Years 1993 and 1994	February 19, 1994
93-100	Summary Report on the Audit of Defense Base Closure and Realignment Budget Data for Fiscal Years 1992 and 1993	May 25, 1993

Naval Audit Service

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
041-S-94	FY 1995 Military Construction Projects From Decisions of 1993 Base Closure and Realignment Commission	April 15, 1994

Appendix B. Summary of Prior Audits and Other Reviews

Naval Audit Service (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
023-S-94	Military Construction Projects Budgeted and Programmed for Bases Identified for Closure or Realignment	January 14, 1994
023-C-93	Implementation of the 1993 Base Closure and Realignment Process	March 15, 1993

Appendix C. Background of Defense Base Realignment and Closures and Scope of the Audit of FY 1996 Defense Base Realignment and Closure Military Construction Costs

Commission on Defense Base Closure and Realignment. On May 3, 1988, the Secretary of Defense chartered the Commission on Defense Base Closure and Realignment (the Commission) to recommend military installations for realignment and closure. Congress passed Public Law 100-526, "Defense Authorization Amendments and Base Closure and Realignment Act," October 24, 1988, which enacted the Commission's recommendations. The law also established the DoD Base Closure Account to fund any necessary facility renovation or MILCON projects associated with BRAC. Public Law 101-510, "Defense Base Closure and Realignment Act of 1990," November 5, 1990, reestablished the Commission. The law also chartered the Commission to meet during calendar years 1991, 1993, and 1995 to verify that the process for realigning and closing military installations was timely and independent. In addition, the law stipulates that realignment and closure actions must be completed within 6 years after the President transmits the recommendations to Congress. The following table summarizes the current estimated costs and net savings for the previous three BRAC actions and the actions recommended in the 1995 Commission decisions:

BRAC Costs and Savings
(Billions of FY 1996 Dollars)

	<u>BRAC Actions</u>		<u>Closure Costs</u>	<u>6-Year Net Savings</u>	<u>Recurring Annual Savings</u>	<u>Total Savings</u>
	<u>Realignments</u>	<u>Closures</u>				
1988	86	59	\$ 2.2	\$0.3	\$0.7	\$ 6.8
1991	34	48	4.0	2.4	1.6	15.8
1993	<u>130</u>	<u>45</u>	<u>6.9</u>	<u>.4</u>	<u>1.9</u>	<u>15.7</u>
Subtotal	250	152	13.1	3.1	4.2	38.3
1995	<u>113</u>	<u>33</u>	<u>3.8</u>	<u>4.0</u>	<u>1.8</u>	<u>18.4</u>
Total	363	185	\$16.9	\$7.1	\$6.0	\$56.7

Appendix C. Background of Defense Base Realignment and Closures and Scope of the Audit of FY1996 Defense Base Realignment and Closure Military Construction Costs

Required Defense Reviews of BRAC Estimates. Public Law 102-190, "National Defense Authorization Act for Fiscal Years 1992 and 1993," December 5, 1991, states that the Secretary of Defense shall ensure that the authorization amount that DoD requested for each MILCON project associated with BRAC actions does not exceed the original estimated cost provided to the Commission. Public Law 102-190 also states that the Inspector General, DoD, must evaluate significant increases in BRAC MILCON project costs over the estimated costs provided to the Commission and send a report to the congressional Defense committees.

Military Department BRAC Cost-estimating Process. To develop cost estimates for the Commission, the Military Departments used the Cost of Base Realignment Actions computer model (COBRA). COBRA uses standard cost factors to convert the suggested BRAC options into dollar values to provide a way to compare the different options. After the President and Congress approve the BRAC actions, DoD realigning activity officials prepare a DD Form 1391, "FY 1996 Military Construction Project Data," for each individual MILCON project required to accomplish the realigning actions. COBRA provides cost estimates as a realignment and closure package for a particular realigning or closing base. The DD Form 1391 provides specific cost estimates for an individual BRAC MILCON project.

Limitations and Expansion to Overall Audit Scope. Because COBRA develops cost estimates as a BRAC package and not for individual BRAC MILCON projects, we were unable to determine the amount of cost increases for each individual BRAC MILCON project. Additionally, because of prior audit efforts that determined potential problems with all BRAC MILCON projects, our audit objectives included all large BRAC MILCON projects.

Overall Audit Selection Process. We reviewed the FY 1996 BRAC MILCON \$1.4 billion budget submitted by the Military Departments and the Defense Logistics Agency. We excluded projects that were previously reviewed by DoD audit organizations. We grouped the remaining BRAC MILCON projects by location and selected groups of projects that totaled at least \$1 million for each group.

Appendix D. DD Form 1391 Overstatement and Non-Base Realignment and Closure Costs for the (Large) Engine Test Cells Project at Arnold Air Force Base

<u>Overstated Requirements</u>	<u>Trenton Square Footage</u>	<u>DD 1391 Square Footage</u>	<u>AEDC Square Footage</u>	<u>Difference</u>	<u>Unit Cost (Per Sq. Ft.)</u>	<u>Overstatement Or Non-BRAC Requirement</u>	<u>Sub-Totals</u>	<u>Totals</u>
Test Cell Area	N/A	21,450	4,608	16,842	\$908	\$15,292,536		
Contingency (5%)						<u>764,627</u>		
Sub-Total						16,057,163		
Supervision, Inspection and Overhead (6%)						<u>963,430</u>		
Total Overstatement								\$17,020,593
<u>Non-BRAC Requirements</u>								
Control Room Area	2,735	0	4,705	1,970	\$256	504,320		
Contingency (5%)						<u>25,216</u>		
Sub-Total						529,536		
Supervision, Inspection and Overhead (6%)						<u>31,772</u>		
Control Room Total							\$561,308	
Admin/Support Area	N/A	2,000	5,514	3,514	\$256	899,584		
Contingency (5%)						<u>44,979</u>		
Sub-Total						944,563		
Supervision, Inspection and Overhead (6%)						<u>56,674</u>		
Admin/Support Total							\$1,001,237	
Total Non-BRAC Requirements								\$1,562,545
Grand Total for Large Engine Project								\$18,583,138

N/A: Not Applicable

AEDC: Arnold Engineering Development Center, Arnold Air Force Base

Appendix E. Non-Base Realignment and Closure Costs for the (Small) Engine Test Facility Alterations Project at Arnold Air Force Base

	<u>Trenton Square Footage</u>	<u>DD 1391 Square Footage</u>	<u>AEDC Square Footage</u>	<u>Difference</u>	<u>Unit Cost (Per Sq. Ft.)</u>	<u>Non-BRAC Requirement</u>	<u>Totals</u>
<u>Non-BRAC Requirements</u>							
Control Room Area	1,829	0	3,274	1,445	\$36	\$52,020	
Contingency (5%)						<u>2,061</u>	
Sub-Total						54,621	
Supervision, Inspection and Overhead (6%)						<u>3,277</u>	
Control Room Total							\$57,898
Engine Prep/Storage Area	N/A	3,000	5,500	2,500	\$84	210,000	
Contingency (5%)						<u>10,500</u>	
Sub-Total						220,510	
Supervision, Inspection and Overhead (6%)						<u>13,230</u>	
Engine Prep/Storage Total							\$233,730
Grand Total for Small Engine Project							\$291,628

N/A: Not Applicable

AEDC: Arnold Engineering Development Center, Arnold Air Force Base

Appendix F. Non-Base Realignment and Closure Costs for the Propulsion System Evaluation Facility Project at Patuxent River

	<u>Trenton Square Footage</u>	<u>DD 1391 Square Footage</u>	<u>Patuxent River Square Footage</u>	<u>Difference (Square Feet)</u>	<u>Unit Cost (Per Sq. Ft.)</u>	<u>Non-BRAC Requirement</u>	<u>Totals</u>
<u>Non-BRAC Requirements</u>							
Information Systems Lab.	N/A	4,405	7,128	2,723	\$215	\$585,445	
Contingency (5%)						<u>29,272</u>	
Sub-Total						614,717	
Supervision, Inspection and Overhead (6%)						<u>36,883</u>	
Information Systems Total							\$651,600
Fuels Controls Facility	N/A	0	3,762	3,662	\$215	787,330	
Contingency (5%)						<u>39,367</u>	
Sub-Total						826,697	
Supervision, Inspection and Overhead (6%)						<u>49,602</u>	
Fuels Controls Total							<u>\$876,299</u>
Total for Propulsion System Facility (See Page 22 for Grand Total)							\$1,527,899

N/A: Not Applicable

Appendix F. Non-Base Realignment and Closure Costs for the Propulsion System Evaluation Facility Project at Patuxent River

	Trenton Square Footage	DD 1391 Square Footage	Patuxent River Square Footage	Difference (Square Feet)	Unit Cost (Per Sq. Ft.)	Non-BRAC Requirement	Totals
<u>Non-BRAC Requirements (Continued)</u>							
Total From Previous Page							\$1,527,899
Other Non-BRAC Requirements :							
High Pressure Compressor	N/A	0	N/A	--	N/A	2,150,000*	
Contingency (5%)						<u>107,500</u>	
Sub-Total						2,257,500	
Supervision, Inspection and Overhead (6%)						<u>135,450</u>	
High Pressure Compressor Total							\$2,392,950
Pre-Fabricated Buildings	N/A	0	3,579	--	N/A	134,384*	
Contingency (5%)						<u>6,719</u>	
Sub-Total						141,103	
Supervision, Inspection and Overhead (6%)						<u>8,466</u>	
Pre-Fabricated Buildings Total							\$149,569
Roof Overhangs/Canopies	0	0	781	--	N/A ¹	28,000*	
Contingency (5%)						<u>1,400</u>	
Sub-Total						29,400	
Supervision, Inspection and Overhead (6%)						<u>1,764</u>	
Roof Overhangs and Canopies Total							\$31,164
Grand Total for Propulsion System Facility Project							\$4,101,582

N/A: Not Applicable

*Cost Came From Design Estimate

Appendix G. Requirement for Economic Analysis

The Under Secretary of Defense (Comptroller) [formerly designated as the Comptroller of the Department of Defense] issued an August 2, 1991, memorandum directing the Military Departments to prepare an economic analysis for all MILCON, major repairs, or renovation projects estimated to cost more than \$2 million.

The NAVFAC Instruction 11010.44E requires an economic analysis for proposals that involve a choice or trade-off between two or more options, often when one option is to maintain the status quo.

The Naval Facilities Engineering Command issued an Economic Analysis Handbook, NAVFAC P-442, in June 1986. This handbook provides a basic framework of economic analysis procedures to use for pre-expenditure analyses. An economic analysis is a systematic approach to choosing how to employ scarce resources for given objectives in an effective and efficient manner and should also contain a cost estimate.

Navy planning officials stated that an economic analysis was unnecessary for the propulsion systems evaluation facility because data compiled for the scenario development satisfied the need for an analysis and the 1993 BRAC decision was a mandate to close Trenton and move the propulsion function to Patuxent River. Officials also said that moving the test cells into a newly constructed building was the only alternative considered since space was not available in existing buildings at the designated site. As a result, no economic analysis was done for the move or the new construction. Additionally, no analysis supports the enhanced fuels controls, information systems laboratory, the roof overhangs and canopies, the prefabricated buildings space requirements, or the enhanced capability of the high pressure compressor.

NAWC AD, Trenton, needs to prepare an economic analysis, using the NAVFAC P-442, "Economic Analysis Handbook," documenting the decision to construct a new building at Patuxent River and the need for additional space beyond the requirements on the originally submitted DD Form 1391.

Appendix H. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
1.a.	Economy and Efficiency. Reduces funding for project P-159T to reflect justifiable requirements.	FY 1996 Base Closure Account Funds of about \$17 million put to better use.
1.b.	Economy and Efficiency. Reduces funding for project P-159T to reflect justifiable requirements.	FY 1996 Base Closure Account Funds of \$1.6 million put to better use.
1.c.	Economy and Efficiency. Reduces funding for project P-160T to reflect justifiable requirements.	FY 1996 Base Closure Account Funds of about \$0.3 million put to better use.
1.d.	Economy and Efficiency. Reduces funding for project P-953T to reflect justifiable requirements.	FY 1996 Base Closure Account Funds of about \$4 million put to better use.
1.e.	Economy and Efficiency. Reduces funding for project P-953T to reflect justifiable requirements.	FY 1996 Base Closure Account Funds of about \$150,000 put to better use.
1.f.	Economy and Efficiency. Suspends funding for project P-953T until an economic analysis justifies the relocation.	Undeterminable, because additional benefits will be determined by future budget decisions and budget requests.

Appendix H. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
2.a., 2.b., 2.c., 2.d.	Economy and Efficiency. Submits revised DD Forms 1391 for projects P-159T, P-160T, and P-953T.	Nonmonetary.
2.e.	Economy and Efficiency. Prepares an economic analysis identifying and supporting cost-effective alternatives for project P-953T.	Undeterminable, because additional benefits will be determined by future budget decisions and budget requests.

Appendix I. Organizations Visited or Contacted

Department of the Army

Corps of Engineers, Engineer District Mobile, AL

Department of the Navy

Naval Air Headquarters, Arlington Va

Headquarters, Naval Aircraft Warfare Center, Arlington, VA

Aircraft Division, Patuxent River, MD

Aircraft Division, Trenton, NJ

Naval Facilities Engineering Command, Alexandria, VA

Chesapeake Engineering Field Division, Washington, DC

Southern Engineering Field Division, Charleston, SC

Department of the Air Force

Arnold Engineering Development Center, Arnold Air Force Base, Tullahoma, TN

Appendix J. Report Distribution

Office of the Secretary Defense

Under Secretary of Defense (Acquisition and Technology)
 Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
 Deputy Chief Financial Officer
 Deputy Comptroller (Program/Budget)
Under Secretary of Defense for Personnel and Readiness
Assistant Secretary of Defense (Economic Security)
 Deputy Assistant Secretary of Defense (Installations)
Assistant to the Secretary of Defense (Public Affairs)

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Assistant Secretary of the Navy (Installations and Environment)
Office of the Comptroller of the Navy
Deputy Chief of Naval Operations (Logistics)
Commander, Naval Facilities Engineering Command
 Commander, Southern Engineering Field Division
 Commander, Chesapeake Engineering Field Division
Commander, Naval Air Headquarters
 Commander, Naval Aircraft Warfare Center
 Commander, Aircraft Division, Patuxent River, MD
 Commander, Aircraft Division, Trenton, NJ
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force
Arnold Engineering Development Center, Arnold Air Force Base, Tullahoma, TN

Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
Inspector General, National Security Agency
Inspector General, Central Imagery Office

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division,
General Accounting Office
Chairman and ranking minority member of each of the following congressional
committees and subcommittees:
Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal
Justice, Committee on Government Reform and Oversight
House Committee on National Security
Honorable Bill Frist, U.S. Senate
Honorable Barbara A. Mikulski, U.S. Senate
Honorable Paul S. Sarbanes, U.S. Senate
Honorable Fred Thompson, U.S. Senate
Honorable Van Hilleary, U.S. House of Representatives
Honorable Steny H. Hoyer, U.S. House of Representatives
Honorable Albert R. Wynn, U.S. House of Representatives

Part III - Management Comments

Under Secretary of Defense (Comptroller) Comments



COMPTROLLER
(Program/Budget)

OFFICE OF THE UNDER SECRETARY OF DEFENSE
1100 DEFENSE PENTAGON
WASHINGTON, DC 20301-1100



MAY 23 1995

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING, DOD IG

SUBJECT: Audit Report on Defense Base Realignment and Closure
Budget Data for the Move of the Naval Air Warfare
Center, Aircraft Division, Trenton, New Jersey, to the
Naval Air Warfare Center, Aircraft Division, Patuxent
River, Maryland, and Arnold Air Force Base, Tennessee
(Project No. 5CG-5017.06)

This responds to your May 17, 1995, memorandum requesting
our comments on the subject report.

The audit recommends that the USD(Comptroller) reduce
funding by \$22.9 million for three construction projects,
P-159T, P-953T, and P-160T associated with the transfer of
propulsion research from Naval Air Warfare Center, Trenton,
New Jersey to Naval Air Warfare Center, Patuxent River, Maryland
and Arnold Air Force Base, Tennessee.

The funding for two of the three projects at issue is
included in the FY 1996 BRAC budget request. We generally agree
with the audit and recommendations; however, since the Navy has
yet to comment formally on the audit and the amount of the
savings has not been resolved, it is premature to take action at
this time. However, if the issue is not resolved by the start
of the fiscal year, we will place funds associated with the
project on administrative withhold. Further, any savings
resulting from the audit will be reprogrammed to other BRAC
requirements as appropriate.


B. R. Paseur

Director for Construction



INTERNET DOCUMENT INFORMATION FORM

A . Report Title: Defense Base Realignment and Closure Budget Data for the Move of the Naval Air Warfare Center, Aircraft Division, Trenton, New Jersey, to the Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland, and Arnold Air Force, Tennessee

B. DATE Report Downloaded From the Internet: 01/06/99

C. Report's Point of Contact: (Name, Organization, Address, Office Symbol, & Ph #):
OAIG-AUD (ATTN: AFTS Audit Suggestions)
Inspector General, Department of Defense
400 Army Navy Drive (Room 801)
Arlington, VA 22202-2884

D. Currently Applicable Classification Level: Unclassified

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